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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
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STAFF SUBMITTAL

COMMISSION ON WATER RESOURCE MANAGEMENT

November 19, 2014
Honolulu, Hawaii

Application for a Stream Channel Alteration Permit (SCAP.4032.3)
City and County of Honolulu, Department of Environmental Services
NPDES Erosion Area Improvements near Keole Place
Kāne'ohe Stream, Kāne'ohe, O'ahu, TMK: (1) 4-5-072:074

APPLICANT:
City and County of Honolulu
Dept. of Environmental Services
1000 Uluohia Street, Suite 308
Kapolei, Hawaii 96707

LANDOWNER:
City and County of Honolulu

SUMMARY OF REQUEST

This Stream Channel Alteration Permit (SCAP.4032.3) Application proposes to stabilize an eroding section of the Kāne'ohe Stream with a mechanically stabilized earth vegetated wall system. The project will repair existing infrastructure (eroding stream bank), mitigate nonpoint source pollution in a ecologically sound manner, maintain the stream corridor's natural appearance consistent with the surrounding urbanized area, and protect the residential subdivision from further erosion.

LOCATION: A 325-foot section of the Kamo'oali'i Stream (tributary to Kāne'ohe Stream) near Keole Place. (See Exhibit 1).

BACKGROUND

On June 24, 2011, the City and County of Honolulu (County) received a National Pollutant Discharge Elimination System ("NPDES") permit to address eroded areas that have a potential to significantly impact water quality.

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On May 14, 2014, the Dept. of the Army determined that no jurisdictional permit is required.

On August 13, 2014, Kimura International, Inc., submitted a complete SCAP on behalf of the County.

DESCRIPTION

This project is part of the County's NPDES Erosion Area Improvement Program which identifies and addresses erosion-prone areas with the potential for significant water quality impact. The purpose of the program is to reduce sediment pollutants through the application of temporary or permanent erosion control best management practices. The County identified this project area as a high priority. The erosion is due to continuous runoff from the surrounding area that sheet flows from the back of the residential properties into the stream. In addition to undermining a chain link fence at the top of the bank, continued erosion threatens the residential lots and is an ongoing source of stream pollutants.

Stream bank hardening has historically been utilized as a cost effective, low maintenance method of stream bank stabilization. However, research has shown that stream channels hardened with riprap and concrete deflect stream flow and increases erosion elsewhere. Hardened streams may also cause undesirable effects to aquatic habitats by increasing water temperature and have negative visual impacts for surrounding landowners, among others.

Therefore, this project proposes a more ecologically sound vegetated wall system to reduce erosion, improve visual impacts, and provide a natural filter for pollutants. The vegetated wall will consist of a product such as BioSock, a compost sock product that is installed in lifts (or rows) to reinforce the slope and provide long-term bank stabilization (See Exhibit 2). The deep roots of the vegetated wall will stabilize the bank and provide flood control by absorbing the force and volume of flood and stream flows, store storm water and slowly release it into the stream system. The plants will filter the storm water by trapping sediment and absorbing pollutants and excess nutrients, improving stream water quality.

The proposed wall will be about 325 feet in length and taper back into the natural bank at each end. (See Exhibit 3). The 9-inch diameter modules will be placed end-to-end and 12 rows total. Backfill soil behind all modules will consist of imported sandy silt or sandy lean clay, except for the upper two rows where native on-site soil will be used. It is estimated that approximately 215 cubic yards of backfill soil will be required. Construction work will be performed from the backyards of the residential lots and will not require equipment in the water.

The modules will be filled with 50 cubic yards of mixed gravel and compost. Plant seeds may be included with the infill material. Stolons or creeper cuttings may be inserted between sock layers as the wall is constructed. As plant life becomes established, it will protect the socks from ultraviolet deterioration and, over the long term, operate as a green wall. A landscaping plan has been developed to ensure the long-term viability of the vegetated wall system. Vegetation

includes "sunshine" vetiver grass (*Chrysopogon zizanioides*), 'a'ali'i (*Dodonaea viscosa*), 'ilie'e (*Plumbago zeylanica*), with 18 months of landscape maintenance.

ANALYSIS

Agency Review Comments:

City and County of Honolulu, Dept. of Planning and Permitting: The Department stated that it does not appear to significantly alter the existing discharge capacity of Kamo'oali'i Stream, nor does it adversely impact the adjacent properties.

Dept. of Hawaiian Home Lands: No comments.

Dept. of Land and Natural Resources (DLNR), Aquatic Resources: The proposed activity is not expected to have any significant impact on the aquatic resource values in these areas. The following mitigative measures and Best Management Practices (BMPs) should be implemented during the installation and construction of the MSE wall to minimize the potential for erosion, siltation and pollution of the aquatic environment along with those listed in the SCAP application.

1) lands denuded of vegetation should be planted or covered as quickly as possible to prevent erosion and the vegetation cleared along stream banks should be removed and prevented from falling into the stream environment;
2) scheduling site work (particularly construction of the wall and subgrade preparation) during periods of minimal rainfall; and,
3) Prevent construction materials, petroleum products, debris, landscaping products, and fertilizers from falling, blowing or leaching into the aquatic environment.

DLNR, Engineering: The project site is located in Zone X. The National Flood Insurance Program does not regulate developments within Zone X.

DLNR, Forestry and Wildlife: No objections.

DLNR, Historic Preservation: Previous records also indicate we previously made a project effect determination of no historic properties affected for this proposed project due to prior disturbance of the project area and have received no new information since our previous determination. We believe no historic properties will be affected by the proposed project.

DLNR, Land Division: No objections.

DLNR, State Parks: Not subject to their regulatory authority and permit.

Dept. of Health, Clean Water Branch:

1. Any project and its potential impacts to State waters must meet the following criteria:

   a. Antidegradation policy (HAR, §11-54-1.1) requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected;
   b. Designated uses (HAR, §11-54-3) as determined by the classification of the receiving State waters; and
   c. Water quality criteria (HAR, §11-54-4 through §11-54-8).

2. NPDES permit coverage is required for pollutant discharges into State surface waters and for certain situations involving storm water (HAR, Ch. 11-55).

   a. Discharges into Class 2 or Class A State waters can be covered under an NPDES general permit only if all of the NPDES general permit requirements are met.

   b. All other discharges into State surface waters and discharges into Class 1 or Class AA State waters require an NPDES individual permit.

   c. NPDES permit coverage for storm water associated with construction activities is required if your project will result in the disturbance of one (1) acre or more of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. NPDES permit coverage is required before the start of the construction activities.

      Land disturbance includes, but is not limited to clearing, grading, grubbing, uprooting of vegetation, demolition (even if leaving foundation slab), staging, stockpiling, excavation into pavement areas which go down to the base course, and storage areas (including areas on the roadway to park equipment if these areas are blocked off from public usage, grassed areas, or bare ground).

3. If the project involves work in, over, or under waters of the United States, it is recommended that the applicant contact the Army Corp of Engineers, Regulatory Branch regarding their permitting requirements.

   Pursuant to Federal Water Pollution Control Act ["Clean Water Act" (CWA)], Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) is required for "[any applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters. . . ." The term "discharge" is defined in CWA, Subsections 502(16),

502(12), and 502(6); Title 40 of the Code of Federal Regulations, Sec. 122.2; and HAR, Ch. 11-54.

4. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Ch. 11-54, and/or permitting requirements, specified in HAR, Ch. 11-55, may be subject to penalties of $25,000 per day per violation.

Office of Hawaiian Affairs: No objections.

U.S. Army Corps of Engineers: On May 14, 2014, the Department of the Army approved a jurisdictional determination that no permit is required.

US Fish and Wildlife Service (FWS): There is no designated or proposed critical habitat under the Endangered Species Act (ESA), or National Wildlife Refuges, wilderness areas, or wildlife preserves in the vicinity of the proposed project. Species documented within the general project vicinity include federally endangered Hawaiian waterbirds (i.e., the Hawaiian stilt (*Himantopus mexicanus knudseni*), Hawaiian moorhen (*Gallinula chloropus sandvicensis*), and Hawaiian coot (*Fulica alai*), and the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*). The wedge-tailed shearwater (*Puffinus pacificus*) and the Pacific golden plover (*Pluvialis fulva*), protected under the Migratory Bird Treaty Act (MBTA), may also occur in the project area.

Because Hawaiian water birds may be in the vicinity of the proposed project, we recommend you incorporate the following measures into your project description to avoid and minimize impacts to listed Hawaiian waterbirds:

- A biological monitor should conduct Hawaiian water bird surveys if significant water features such as wetlands and large open riparian areas. If resident birds are present at the proposed project site prior to project initiation water bird nesting surveys should be conducted.
- Any documented nests or broods within the project vicinity should be reported to the Service within 48 hours.
- A 100-foot buffer should be established and maintained around all active nests and/or broods until the chicks/ducklings have fledged. No potentially disruptive activities or habitat alteration should occur within this buffer.
- The Service should be notified immediately prior to project initiation and provided with the results of pre-construction Hawaiian water bird surveys.
- If Hawaiian water birds are actively present then a biological monitor(s) should be present on the project site during all construction or earth moving activities to ensure that Hawaiian waterbirds and nests are not adversely impacted.
- If a listed Hawaiian water bird is observed within the project site, or flies into the site while activities are occurring, all activities should be temporarily suspended within 100

feet of the individual(s). Work should not resume within that area until the Hawaiian water bird(s) leave the area on their own accord.

- A post-construction report should be submitted to the Service with 30 days of the completion of the project. The report should include the results of Hawaiian water bird surveys, the location and outcome of documented nests, and any other relevant information.
- Because the proposed activities may impact water resources that provide habitat for listed Hawaiian water birds, we are attaching the Service's recommended Best Management Practices regarding sedimentation and erosion in aquatic environments. We encourage you to incorporate the relevant practices into your project design.

In addition, because your project may result in standing water or creation of open water, thus attracting Hawaiian water birds to the site, we offer the below information and recommendations to assist you with your project implementation.

In particular, the Hawaiian stilt is known to nest in sub-optimal locations (e.g., any ponding water) if water is present. Hawaiian water birds attracted to sub-optimal habitat may suffer adverse impacts, such as predation and reduced reproductive success, and thus the project may create an attractive nuisance. To avoid potential adverse impacts to listed Hawaiian water birds, we recommend the project occur outside of the Hawaiian stilt breeding season (February through August). If the Hawaiian stilt breeding season cannot be avoided, we recommend you work with our office during project planning so that we may assist you in developing specific measures to avoid impacts to listed species. If impacts to listed Hawaiian water birds cannot be fully avoided, the project should initiate consultation pursuant to section 7 of the ESA.

The Hawaiian hoary bat roosts in both exotic and native woody vegetation and, while foraging, will leave young unattended in nursery trees and shrubs when they forage. If trees or shrubs suitable for bat roosting are cleared during the breeding season, there is a risk that young bats could inadvertently be harmed or killed. To minimize impacts to the endangered Hawaiian hoary bat, woody plants greater than 15 feet tall should not be disturbed, removed, or trimmed during the bat birthing and pup rearing season (June 1 through September 15). Site clearing should be timed to avoid disturbance to Hawaiian hoary bats in the project area.

We provide our guidance on wedge-tailed shearwaters, although we understand that it is unlikely that the proposed project will involve any noteworthy lighting or other described features that most commonly negatively impact wedge-tailed shearwaters.

The wedge-tailed shearwater is protected under the federal MBTA. Wedge-tailed shearwaters fly at night and are attracted to artificially-lighted areas resulting in disorientation and subsequent fallout due to exhaustion. Sea birds are also susceptible to collision with objects that protrude above the vegetation layer, such as utility lines, guy-wires, and communication towers. Additionally, once grounded, they are vulnerable to predators and are often struck by vehicles

along roadways. Please be aware that the fallout dates for the wedge-tailed shearwater are from approximately November 1 until December 21.

If the proposed project has a need for significant outdoor lighting, a lighting plan should be developed and incorporated into the project description to minimize and avoid artificial lighting impacts to seabirds, including educating all project staff with information about seabird fallout. If lights cannot be eliminated due to safety or security concerns then they should be positioned low to the ground, be motion-triggered and be shielded and/or full cut-off. Effective light shields should be completely opaque, sufficiently large, and positioned so that the bulb is only visible from below and so that light from the shielded source cannot be seen from above. Construction activities should only occur during daylight hours whenever possible. The project description should address all potential impacts to seabirds and outline conservation measures to minimize these impacts.

We also recommend that an experienced biologist conduct aquatic flora and fauna surveys along the proposed project footprint prior to initiating construction, and then address how your project will avoid and minimize impacts to these aquatic resources.

The FWS recommends the following measures to be incorporated into project planning to avoid or minimize impacts to fish and wildlife resources. BMPs include the incorporation of procedures or materials that may be used to reduce either direct or indirect negative impacts to aquatic habitats that result from project construction-related activities. These BMPs are recommended in addition to, and do not override any terms, conditions, or other recommendations prepared by the FWS, other federal, state or local agencies. If you have questions concerning these BMPs, please contact the FWS Aquatic Ecosystems Conservation Program at 808-792-9400.

1. Authorized dredging and filling-related activities that may result in the temporary or permanent loss of aquatic habitats should be designed to avoid indirect, negative impacts to aquatic habitats beyond the planned project area.

2. Dredging/filling in the marine environment should be scheduled to avoid coral spawning and recruitment periods, and sea turtle nesting and hatching periods. Because these periods are variable throughout the Pacific islands, we recommend contacting the relevant local, state, or federal fish and wildlife resource agency for site specific guidance.

3. Turbidity and siltation from project-related work should be minimized and contained within the project area by silt containment devices and curtailing work during flooding or adverse tidal and weather conditions. BMPs should be maintained for the life of the construction period until turbidity and siltation within the project area is stabilized. All project construction-related debris and sediment containment devices should be removed and disposed of at an approved site.

4. All project construction-related materials and equipment (dredges, vessels, backhoes, silt curtains, etc.) to be placed in an aquatic environment should be inspected for pollutants including, but not limited to; marine fouling organisms, grease, oil, etc., and cleaned to remove pollutants prior to use. Project related activities should not result in any debris disposal, non-native species introductions, or attraction of non-native pests to the affected or adjacent aquatic or terrestrial habitats. Implementing both a litter-control plan and a Hazard Analysis and Critical Control Point plan can help to prevent attraction and introduction of non-native species.

5. Project construction-related materials (fill, revetment rock, pipe, etc.) should not be stockpiled in, or in close proximity to aquatic habitats and should be protected from erosion (e.g., with filter fabric, etc.), to prevent materials from being carried into waters by wind, rain, or high surf.

6. Fueling of project-related vehicles and equipment should take place away from the aquatic environment and a contingency plan to control petroleum products accidentally spilled during the project should be developed. The plan should be retained on site with the person responsible for compliance with the plan. Absorbent pads and containment booms should be stored on-site to facilitate the clean-up of accidental petroleum releases.

7. All deliberately exposed soil or under-layer materials used in the project near water should be protected from erosion and stabilized as soon as possible with geotextile, filter fabric or native or non-invasive vegetation matting, hydro-seeding, etc.

Haw. Rev. Stat. Chap 343, Environmental Review

Environmental Assessment (EA) Triggers. The proposed action triggered an EA due to the use of County lands and funds (Haw. Rev. Stat. §343-5(a)). On July 10, 2014, the County declared the project exempt from the preparation of an EA.

Staff Review

The Kāne'ohe Stream is perennial, about 20 miles long, and the typical flow is about 10-20 cubic feet per second (cfs). The watershed is 5 square miles and has a maximum elevation of less than 2,800 feet. There are some endemic species in the lower reaches, but most are introduced. The location of the proposed project is in the urban district. The watershed is listed by the DOH as a Water Quality Limited Segment.

Haw. Rev. Stat.§174C-71(3) gives responsibility to the Commission on Water Resource Management for protecting stream channels from alteration whenever practicable to provide for fishery, wildlife, recreational, aesthetic, scenic, and other beneficial instream uses. Generally, the criteria (HAR §13-169-52(c)) for ruling on application are guided by the following:

(1) Channel alterations that would adversely affect the quantity and quality of the stream water or the stream ecology should be minimized or not be allowed.

It is expected that the vegetated wall system may improve water quality by reducing erosion, trap sediment, absorbing pollutants and excess nutrients, and minimize temperature fluctuations. Water quantity remains unchanged.

(2) Where instream flow standards or interim instream flow standards have been established, no permit shall be granted for any channel alteration which diminishes the quantity or quality of stream water below the minimum established to support identified instream uses.

The interim instream flow standards were established in 1989 (HAR §13-169-49.1). The proposed action is not expected to diminish the quantity or quality of water in the Stream.

(3) The proposed channel alteration should not interfere substantially and materially with existing instream or non-instream uses or with channel alterations previously permitted.

The lower section of Kāne'ohe Stream has been substantially altered with a concrete lining and bridge. The proposed action is not expected to interfere with existing instream or non-instream uses or with channel alterations previously permitted.

RECOMMENDATION

Approve a Stream Channel Alteration Permit (SCAP.4032.3) Application for the City and County of Honolulu, Department of Environmental Services, NPDES Erosion Area Improvements near Keole Place located in the Kāne'ohe Stream in Kāne'ohe, O'ahu, TMK (1) 4-5-072:074, subject to the standard conditions in Exhibit 4.

Respectfully submitted,

WILLIAM M. TAM
Deputy Director

SCAP.4032.3 City and County of Honolulu
Kāne'ohe Stream
CWRM Staff Submittal

November 19, 2014

Exhibits:

1. Location Map.
2. Typical BioSock Wall.
3. Kāne'ohe Stream, looking downstream. Red Line Shows Base of the New BioSock Wall.
4. Standard Stream Channel Alteration Permit Conditions.

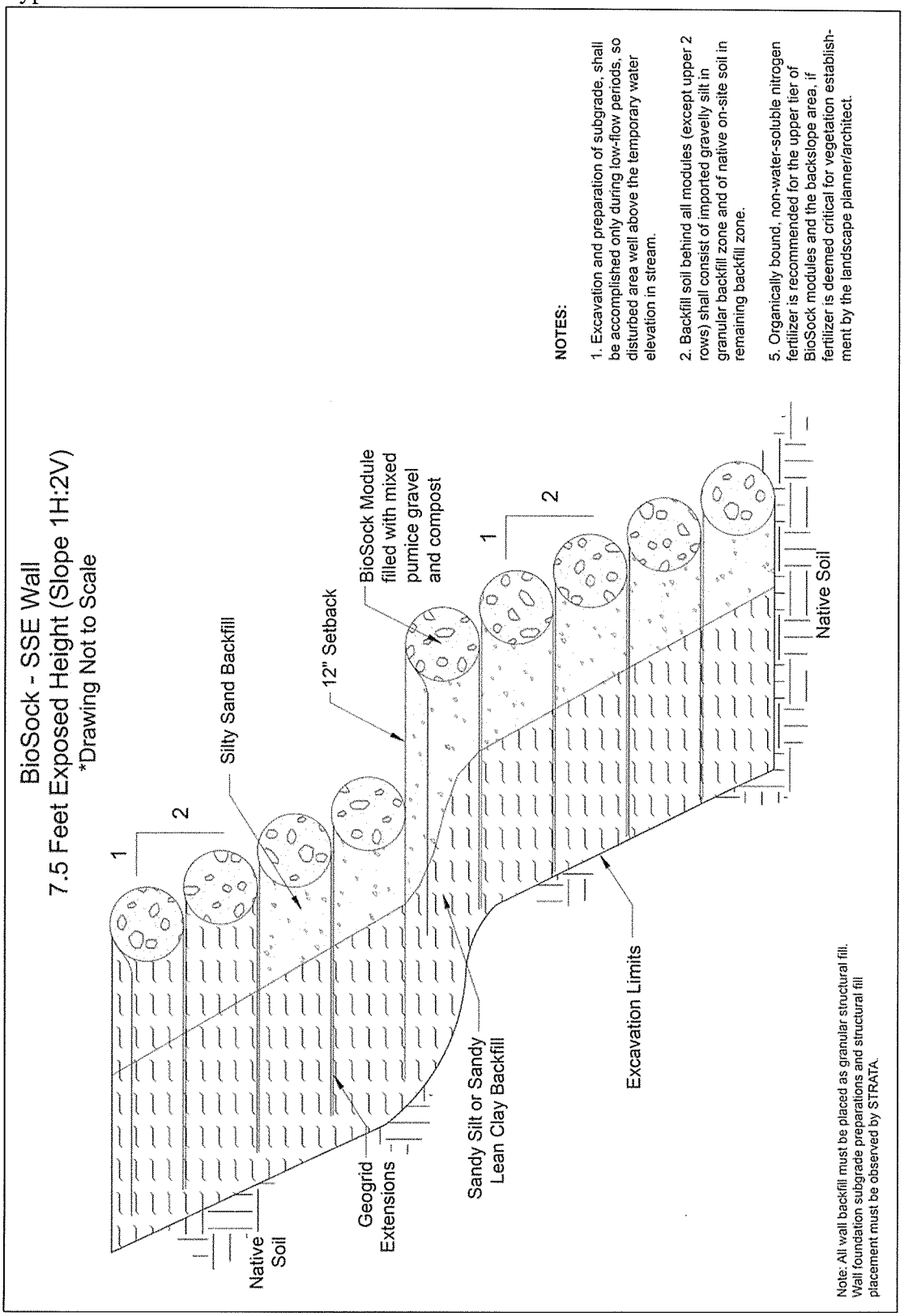
APPROVED FOR SUBMITTAL:

WILLIAM J. AILA, JR.
Chairperson

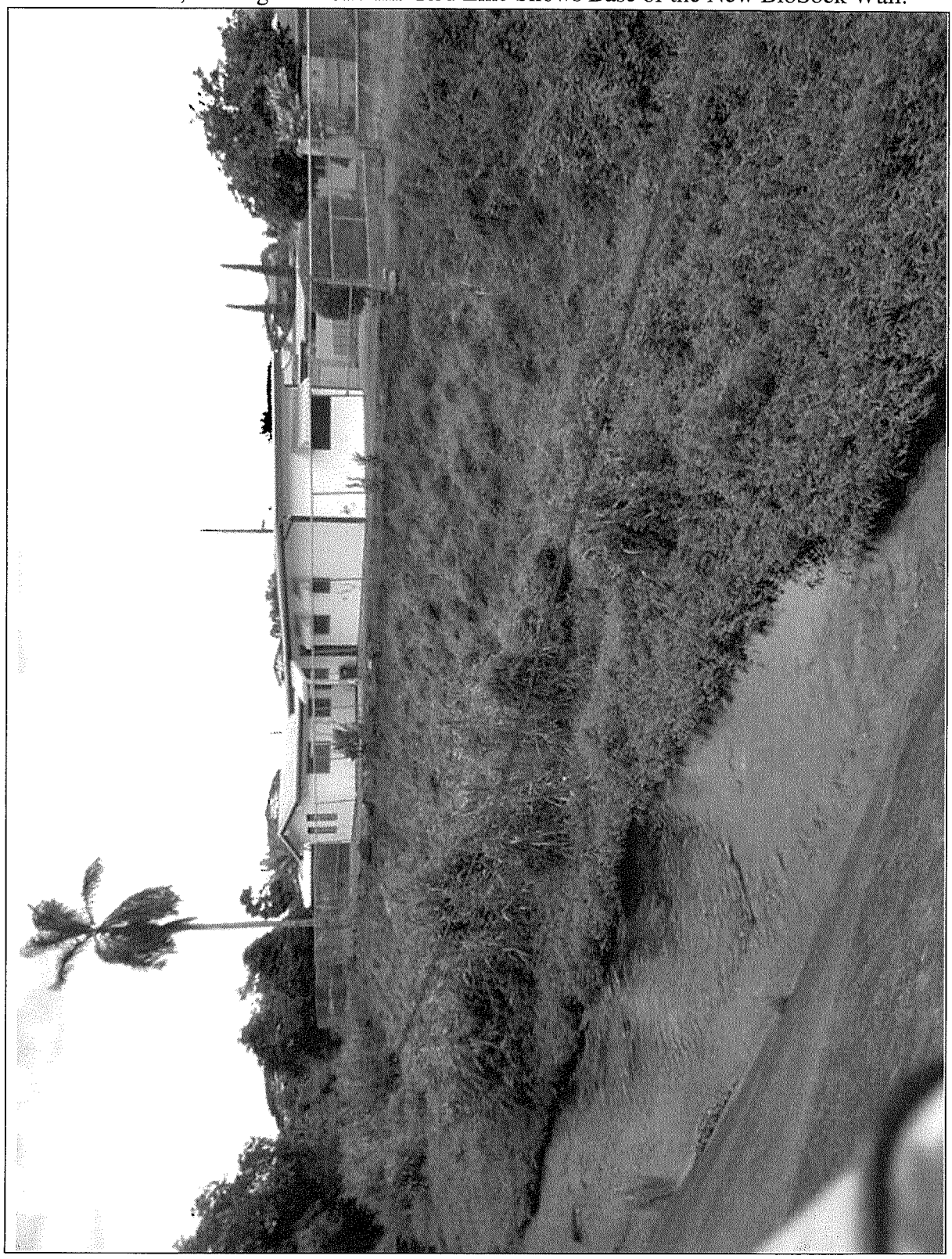
Location Map.

EXHIBIT 1

Typical BioSock Wall.



Kāne'ohe Stream, looking downstream. Red Line Shows Base of the New BioSock Wall.



STANDARD STREAM CHANNEL ALTERATION PERMIT CONDITIONS
(Revised 9/19/07)

1. The permit application and staff submittal approved by the Commission at its meeting on November 19, 2014, shall be incorporated herein by reference.

2. The applicant shall comply with all other applicable statutes, ordinances, and regulations of the Federal, State and county governments.

3. The applicant, his successors, assigns, officers, employees, contractors, agents, and representatives, shall indemnify, defend, and hold the State of Hawaii harmless from and against any claim or demand for loss, liability, or damage including claims for property damage, personal injury, or death arising out of any act or omission of the applicant or his successors, assigns, officers, employees, contractors, and agents under this permit or related to the granting of this permit.

4 The applicant shall notify the Commission, by letter, of the actual dates of project initiation and completion. The applicant shall submit a set of as-built plans and photos of the completed work to the Commission upon completion of this project. This permit may be revoked if work is not started within six (6) months after the date of approval or if work is suspended or abandoned for six (6) months, unless otherwise specified. The proposed work under this stream channel alteration permit shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Commission upon showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Commission no later than three (3) months prior to the date the permit expires. If the commencement or completion date is not met, the Commission may revoke the permit after giving the permittee notice of the proposed action and an opportunity to be heard.

5. Before proceeding with any work authorized by the Commission, the applicant shall submit one set of construction plans and specifications to determine consistency with the conditions of the permit and the declarations set forth in the permit application.

6. The applicant shall develop site-specific, construction best management practices (BMPs) that are designed, implemented, operated, and maintained by the applicant and its contractor to properly isolate and confine construction activities and to contain and prevent any potential pollutant(s) discharges from adversely impacting state waters. BMPs shall control erosion and dust during construction and schedule construction activities during periods of low stream flow.

7. The applicant shall protect and preserve the natural character of the stream bank and stream bed to the greatest extent possible. The applicant shall plant or cover lands denuded of vegetation as quickly as possible to prevent erosion and use native plant species common to riparian environments to improve the habitat quality of the stream environment.

8. In the event that historic resources, including human skeletal remains, cultural layers, cultural deposits, features, artifacts, or sinkholes, lava tubes or lava blisters/bubbles are identified during construction activities, all work should cease in the immediate vicinity of the find, the find should be protected from additional disturbance, and the State Historic Preservation Division should be contacted immediately. Work may commence only after written concurrence by the State Historic Preservation Division.